-- ~~19.~~ 6. A compound according to claim 1 which is:
6,7-dimethyl-5,7,13-triazatetracyclo[9.3.1.$0^{2,10}$.$0^{4,8}$]pentadeca-2(10),3,5,8-tetraene;
or a pharmaceutically acceptable salt thereof. --

-- ~~20.~~ 7. A compound according to claim 1 which is:
6,7-dimethyl-5,8,14-triazatetracyclo[10.3.1.$0^{2,11}$.$0^{4,9}$]hexadeca-2(11),3,5,7,9-pentaene;
or a pharmaceutically acceptable salt thereof. --

-- ~~21.~~ 8. A compound according to claim 1 which is:
5,8,14-triazatetracyclo[10.3.1.$0^{2,11}$.$0^{4,9}$]hexadeca-2(11),3,5,7,9-pentaene;
or a pharmaceutically acceptable salt thereof. --

-- ~~22.~~ 9. A compound according to claim 1 which is:
14-methyl-5,8,14-triazatetracyclo[10.3.1.$0^{2,11}$.$0^{4,9}$]hexadeca-2(11),3,5,7,9-pentaene;
or a pharmaceutically acceptable salt thereof. --

-- ~~23.~~ 10. A compound according to claim 1 which is:
5-oxa-7,13-diazatetracyclo[9.3.1.$0^{2,10}$.$0^{4,8}$]pentadeca-2(10),3,6,8-tetraene;
or a pharmaceutically acceptable salt thereof. --

-- ~~24.~~ 11. A compound according to claim 1 which is:
7-methyl-5-oxa-6,13-diazatetracyclo[9.3.1.$0^{2,10}$.$0^{4,8}$]pentadeca-2,4(8),6,9-tetraene;
or a pharmaceutically acceptable salt thereof. --

-- 25. A compound according to claim 1 which is:
5,13-diazatetracyclo[9.3.1.$0^{2,10}$.$0^{4,8}$]pentadeca-2,4(8),9-trien-6-one;
or a pharmaceutically acceptable salt thereof. --

-- 26. A compound according to claim 1 which is:
6-oxo-5-oxa-7,13-diazatetracyclo[9.3.1.$0^{2,10}$.$0^{4,8}$]pentadeca-2(10),3,6,8-tetraene;
or a pharmaceutically acceptable salt thereof. --

REMARKS

Applicants have amended the Abstract to correct the description of the variables as presented in the structure. Applicants have inserted a statement on page 1 of the application to indicate the priority required by 37 C.F.R. § 1.78. Applicants have corrected a number of typographical and spelling errors on pages 1, 3, 8, 9, 23-25, 27 and 31, as specifically set forth above.

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Applicants have inserted text on page 5 relating to other embodiments of the invention that are fully supported by claims 3-6 as originally filed. The insertion of the text at page 7 of the structure of formula (I') and accompanying description has full literal support in claim 14 in the application as originally filed. The insertion of "obsessive-compulsive disorder" at pages 8 and 9 and claim 10 into the lists of diseases, disorders or conditions for which pharmaceutical compositions comprising the compounds of the invention, and methods employing those compounds/compositions is supported by the description at page 1, line 18.

Applicants have amended claim 1 such that it relates only to compounds where R^2 and R^3 join to form a ring and thus deletes the substituent list for R^2 and R^3 do not form a ring . This amendment has support in the specification at page 3, lines 7-19; and from page 4, line 8 to page 5, line 8. Consistent with this amendment to claim 1, Applicants have canceled dependent claims 3, 4, 5 and 6 which all relate to compounds where the groups R^2 and R^3 do not together form a ring and now fall without the scope of amended claim 1. Further, Applicants have canceled claims 11, 12 and 13. Applicants have made these amendments and cancellations of claims without prejudice to file divisional application(s) drawn to the canceled subject matter.

Claim 2 now recites definitions of R^{10} and R^{17} that are consistent with the appropriate definitions in claim 1 from which it depends. Applicants have amended claim 9 to recite a pharmaceutical composition comprising a compound of claim 1 and a pharmaceutically acceptable carrier with the deletion of other descriptors in the claim. Applicants have canceled claim 7 to avoid overlap with claim 9. Applicants have amended claim 10 to correct several typographical, spelling and format errors. Applicants have amended claim 14 to insert a definition of R^5 and R^6 directly from claim 1.

New claims 15 through 26 set forth species corresponding to the invention. New claim 15 is supported by Examples 13-15, 17-18, 20-24, and 29. New claim 16 is supported by the specification at page 5, line 14 to page 6, line 36. New claims 17 through 26 are supported by Examples 10, 12, 16, 25, 26, 27, 28, 36, 41 and 42, respectively.

All of the foregoing amendments have support in the application as filed. These amendments add no new matter to the application.

Rejection Under 35 U.S.C. § 112, Second Paragraph

The Examiner has rejected claims 1-11, 13 and 14 under 35 U.S.C. § 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. The Examiner has set forth the following particular objections:

a. Claim 1 - "Preferably from zero to two substituents"

The Examiner has objected to the statements of "range/limitation" for "aryl and heteroaryl group" wherein both descriptors "optionally be substituted with one or more substituents" and "preferably from zero to two substituents" are present.

Applicants have deleted the particular passage from claim 1 in which "aryl and heteroaryl groups" are accompanied by these descriptors. Accordingly, this objection is now moot.

b. Claim 1 - "e.g."

The Examiner has objected to the phrase "e.g." in claim 1.

Applicants have deleted the passage wherein that expression occurs from claim 1. Accordingly, this objection is now moot.

c. Claim 1 - "Preferably from zero to two substituents" - Mono/Bicyclic Rings

The Examiner has objected to the statements of "range/limitation" for "monocyclic and bicyclic rings" wherein both descriptors "optionally be substituted with one or more substituents" and "preferably from zero to two substituents for the monocyclic rings and zero to three substituents for the bicyclic rings" are present.

Applicants have amended claim 1 to delete the phrase "preferably from zero to two substituents for the monocyclic rings and zero to three substituents for the bicyclic rings" and overcome this objection. Accordingly, Applicants request the Examiner withdraw this particular objection.

d. Claim 1 - Missing Period

The Examiner has asserted that claim 1 is "vague and indefinite in that . . . the claim does not end with a period."

Applicants have amended claim 1 to insert a period at the end of the claim.

e. Claim 2 - "$(C_0$-$C_6)$alkoxy-$(C_0$-$C_6)$alkyl-"

The Examiner urges "that the limitation '$(C_0$-$C_6)$alkoxy-$(C_0$-$C_6)$alkyl-' in the definition of R^{10} and R^{17}" in claim 2 has insufficient antecedent basis in claim 1.

Applicants have amended claim 2 to replace the definitions of R^{10} and R^{17} to reflect the substituent pattern as set forth in claim 1. Accordingly, Applicants request withdrawal of this objection.

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f. Claim 2 - Phenyl and Monocyclic Heteroaryl

The Examiner urges "that the limitation 'phenyl and monocyclic heteroaryl' in the definition of R^{10} and R^{17}" in claim 2 has insufficient antecedent basis in claim 1.

Applicants have amended claim 2 to replace the definitions of R^{10} and R^{17} to reflect the substituent pattern as set forth in claim 1. Accordingly, Applicants request withdrawal of this objection.

g. Claim 9 - "Intended Use"

The Examiner has objected to claim 9 as a substantial duplicate of claim 7 "as the only difference is a statement of intended use which is not given material weight."

Applicants have canceled claim 7 and amended claim 9 to recite a pharmaceutical composition comprising a compound according to claim 1 and a pharmaceutically acceptable carrier. Accordingly, Applicants have overcome this objection.

h. Claims 9, 10 and 13 - "Including but not limited to"

The Examiner has objected to claims 9, 10 and 13 because the phrase "including by not limited to" renders the claims indefinite.

Applicants have canceled claims 9 and 13 in this application and have amended claim 10 to avoid the use of the phrase to which the Examiner has objected. Accordingly, the Examiner should withdraw this objection.

i. Claims 9, 10 and 13 - "e.g"

The Examiner has objected to claims 9, 10 and 13 because the phrase "e.g." renders the claims indefinite.

Applicants have canceled claims 9 and 13 in this application and have amended claim 10 to avoid the use of the phrase to which the Examiner has objected. Accordingly, the Examiner should withdraw this objection.

j. Claims 9, 10 and 13 - "Including"

The Examiner has objected to claims 9, 10 and 13 because the phrase "including" renders the claims indefinite.

Applicants have canceled claims 9 and 13 in this application and have amended claim 10 to avoid the use of the term to which the Examiner has objected. Accordingly, the Examiner should withdraw this objection.

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k. Claim 11 - "Defined as in formula I above"

The Examiner has objected to the use of the phrase "defined as in formula I above" to define the substituents R^5 and R^6 in that claim.

Applicants have canceled claim 11 thereby rendering this objection moot.

l. Claim 14 - "From 1 to 3 halo atoms"

The Examiner has objected to the statements of "range/limitation" for a particular alkyl moiety wherein both descriptors of substitution pattern, "from 1 to 3 halo atoms" and "preferably from 1 to 3 fluoro or chloro atoms", are present.

Applicants have amended claim 1 to delete the phrase "preferably from 1 to 3 fluoro or chloro atoms" and overcome this objection. Accordingly, Applicants request the Examiner withdraw this particular objection.

Rejection Under 35 U.S.C. § 102

The Examiner has rejected claims 1 and 3 under 35 U.S.C. § 102(b) as being anticipated by Mazzocchi et al., *J. Med. Chem.*, **22(4)**: 455-457 (1979) ("Mazzocchi"). The Examiner asserts that Mazzocchi "teaches the compounds of the instant invention where R^1 is $-CH_2CH_2$-cyclopropyl, $-CH_2CH_2CH_3$, $-CH_2-CH=CH_2$ or $-CH_2-CH=CMe_2$."

Applicants have amended claim 1 to exclude certain classes of compounds without prejudice to file divisional applications thereto. The claims presently cover compounds of formula I wherein R^2 and R^3 together form an additional ring. The amendments to claim 1 render this objection moot because the compounds as claimed do not encompass the compounds of Mazzocchi and hence cannot be anticipated by that reference under 35 U.S.C. § 102.

Accordingly, Applicants request that the Examiner withdraw this rejection.

Claim Objections - Claim 14

The Examiner has objected to claim 14 as being in improper form because a multiple dependent claim should refer to other claims in the alternative only.

Applicants have amended claim 14 to insert definition of the substituent groups R^5 and R^6 into the claim itself and thereby canceled the dependence upon claim 2. Accordingly, Applicants have overcome this particular claim objection.

Applicants believe the present amendments render the set of pending claims in condition for allowance and request the issuance of a Notice of Allowance. If a telephone interview would

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assist the furtherance of the prosecution of this application, the Examiner is invited to contact the undersigned.

Respectfully submitted,

Date: 12/29/2000

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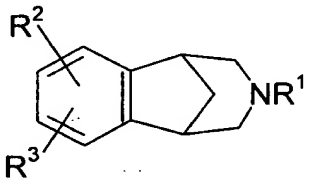
ATTACHMENT TO RESPONSE AND AMENDMENT

MARKED-UP VERSIONS OF AMENDED CLAIMS

1. (Once Amended) A compound of the formula



(I)

R^1 is hydrogen, (C_1 -C_6)alkyl, unconjugated (C_3-C_6)alkenyl, $XC(=O)R^{13}$, benzyl or -CH_2CH_2-O-(C_1-C_4)alkyl;

[R^2 and R^3 are selected, independently, from hydrogen, (C_2-C_6)alkenyl, (C_2-C_6)alkynyl, hydroxy, nitro, amino, halo, cyano, -SO_q(C_1-C_6)alkyl wherein q is zero, one or two, (C_1-C_6)alkylamino-, [(C_1-C_6)alkyl]$_2$amino-, $-CO_2R^4$, $-CONR^5R^6$, $-SO_2NR^7R^8$, $-C(=O)R^{13}$, $-XC(=O)R^{13}$, aryl-(C_0 -C_3)alkyl- or aryl-(C_0-C_3)alkyl-O-, wherein said aryl is selected from phenyl and naphthyl, heteroaryl-(C_0-C_3)alkyl- or heteroaryl-(C_0-C_3)alkyl-O-, wherein said heteroaryl is selected from five to seven membered aromatic rings containing from one to four heteroatoms selected from oxygen, nitrogen and sulfur, and X^2(C_0-C_6)alkoxy-(C_0-C_6)alkyl-, wherein X^2 is absent or X^2 is (C_1-C_6)alkylamino- or [(C_1-C_6)alkyl]$_2$amino-, and wherein the (C_0-C_6)alkoxy-(C_0-C_6)alkyl- moiety of said X^2(C_0-C_6)alkoxy-(C_0-C_6)alkyl- contains at least one carbon atom, and wherein from one to three of the carbon atoms of said (C_0-C_6)alkoxy-(C_0-C_6)alkyl- moiety may optionally be replaced by an oxygen, nitrogen or sulfur atom, with the proviso that any two such heteroatoms must be separated by at least two carbon atoms, and wherein any of the alkyl moieties of said (C_0-C_6)alkoxy-(C_0-C_6)alkyl- may be optionally substituted with from two to seven fluorine atoms, and wherein one of the carbon atoms of each of the alkyl moieties of said aryl-(C_0-C_3)alkyl- and said heteroaryl-(C_0-C_3)alkyl- may optionally be replaced by an oxygen, nitrogen or sulfur atom, and wherein each of the foregoing aryl and heteroaryl groups may optionally be substituted with one or more substituents, preferably from zero to two substituents, independently selected from (C_1-C_6)alkyl optionally substituted with from one to seven fluorine atoms, (C_1-C_6)alkoxy optionally substituted with from two to seven fluorine atoms, halo (e.g., chloro, fluoro, bromo or iodo), (C_2-C_6)alkenyl, (C_2-C_6)alkynyl, hydroxy, nitro, cyano, amino, (C_1-C_6)alkylamino-, [(C_1-C_6) alkyl]$_2$amino-, $-CO_2R^4$, $-CONR^5R^6$, $-SO_2NR^7R^8$, $-C(=O)R^{13}$ and $-XC(=O)R^{13}$;]

[or] R^2 and R^3, together with the carbons to which they are attached, form a four to seven membered monocyclic, or ten to fourteen membered bicyclic, carbocyclic ring that can be

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saturated or unsaturated, wherein from one to three of the nonfused carbon atoms of said monocyclic rings, and from one to five of the carbon atoms of said bicyclic rings that are not part of the benzo ring shown in formula I, may optionally and independently be replaced by a nitrogen, oxygen or sulfur, and wherein said monocyclic and bicyclic rings may optionally be substituted with one or more substituents [, preferably from zero to two substituents for the monocyclic rings and from zero to three substituents for the bicyclic rings,] that are selected, independently, from (C_1 -C_6) alkyl optionally substituted with from one to seven fluorine atoms [,] ; (C_1 -C_6) alkoxy optionally substituted with from one to seven fluorine atoms [,] ; nitro, cyano, halo, (C_2-C_6)alkenyl, (C_2-C_6)alkynyl, hydroxy, amino, (C_1 -C_6)alkylamino and [(C_1 -C_6) alkyl]$_2$amino, -CO_2R^4, -$CONR^5R^6$, -$SO_2NR^7R^8$, -$C(=O)R^{13}$ and -$XC(=O)R^{13}$;

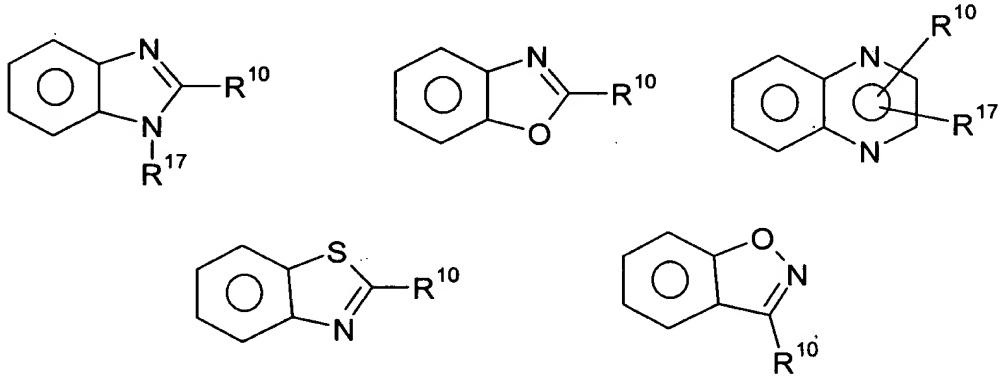
wherein each R^4, R^5, R^6, R^7, R^8 and R^{13} is selected, independently, from hydrogen and (C_1 -C_6) alkyl, or R^5 and R^6, or R^7 and R^8 together with the nitrogen to which they are attached, form a pyrrolidine, piperidine, morpholine, azetidine, piperazine, -N-(C_1-C_6)alkylpiperazine [piperizine, N-(C_1-C_6)alkylpiperizine] or thiomorpholine ring, or a thiomorpholine ring wherein the ring sulfur is replaced with a sulfoxide or sulfone; and

each X is, independently, (C_1-C_6)alkylene;

[with the proviso that: (a) at least one of R^1, R^2 and R^3 must be the other than hydrogen, and (b) when R^2 and R^3 are both hydrogen, R^1 cannot be hydrogen or methyl;]

or a pharmaceutically acceptable salt thereof [;] .

2. (Once Amended) A compound according to claim 1, wherein R^2 and R^3, together with the benzo ring of formula I, form a bicyclic ring system selected from the following:



wherein R^{10} and R^{17} are selected, independently, from (C_1-C_6) alkyl optionally substituted with from one to seven fluorine atoms; (C_1-C_6)alkoxy optionally substituted with from one to seven fluorine atoms; (C_2-C_6)alkenyl, (C_2-C_6)alkynyl, hydroxy, amino, (C_1-C_6)alkylamino and ((C_1 -C_6)alkyl)$_2$amino, -CO_2R^4, -$CONR^5R^6$, -$SO_2NR^7R^8$, -$C(=O)R^{13}$ and -

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$XC(=O)R^{13}$ [(C_0-C_6)alkoxy-(C_0-C_6)alkyl- wherein the total number of carbon atoms does not exceed six and wherein any of the alkyl moieties may optionally be substituted with from one to seven fluorine atoms; nitro, cyano, halo, amino, (C_1-C_6)alkylamino-, $[(C_1-C_6)$ alkyl$]_2$amino-, $-CO_2R^4$, $-CONR^5R^6$, $-SO_2NR^7R^8$, $-C(=O)R^{13}$, $-XC(=O)R^{13}$, phenyl and monocyclic heteroaryl, wherein said heteroaryl is selected from five to seven membered aromatic rings containing from one to four heteroatoms selected from oxygen, nitrogen and sulfur,] and wherein R^4, R^5, R^6, R^7, R^8 and R^{13} are as defined in claim 1.

9. (Once Amended) A pharmaceutical composition [for treating a disorder or condition selected from inflammatory bowel disease (including but not limited to ulcerative colitis, pyoderma gangrenosum and Crohn's disease), irritable bowel syndrome, spastic dystonia, chronic pain, acute pain, celiac sprue, pouchitis, vasoconstriction, anxiety, panic disorder, depression, bipolar disorder, autism, sleep disorders, jet lag, amylotropic lateral sclerosis (ALS), cognitive dysfunction, hypertension, bulimia, anorexia, obesity, cardiac arrythmias, gastric acid hypersecretion, ulcers, pheochromocytoma, progressive supramuscular palsy, chemical dependencies and addictions (e.g., dependencies on, or addictions to nicotine (and/or tobacco products), alcohol, benzodiazepines, barbituates, opioids or cocaine), headache, stroke, traumatic brain injury (TBI), psychosis, Huntington's Chorea, tardive dyskinesia, hyperkinesia, dyslexia, schizophrenia, multi-infarct dementia, age related cognitive decline, epilepsy, including petit mal absence epilepsy, senile dementia of the Alzheimer's type (AD), Parkinson's disease (PD), attention deficit hyperactivity disorder (ADHD) and Tourette's Syndrome in a mammal,] comprising an amount of a compound according to claim 1 [that is effective in treating such disorder or condition] and a pharmaceutically acceptable carrier.

10. A method for treating a disorder or condition selected from inflammatory bowel disease , [(including but not limited to] ulcerative colitis, pyoderma gangrenosum , [and] Crohn's disease [ )], irritable bowel syndrome, spastic dystonia, chronic pain, acute pain, celiac sprue, pouchitis, vasoconstriction, anxiety, panic disorder, depression, bipolar disorder, autism, sleep disorders, jet lag, amyotrophic [amylotropic] lateral sclerosis (ALS), cognitive dysfunction, hypertension, bulimia, anorexia, obesity, cardiac arrythmias, gastric acid hypersecretion, ulcers, pheochromocytoma, progressive supranuclear [supramuscular] palsy, chemical dependencies and addictions; dependencies on, or addictions to, nicotine, tobacco products, alcohol, benzodiazepines, barbiturates, opioids or cocaine; headache, stroke, traumatic brain injury (TBI), obsessive-compulsive disorder (OCD), [chemical dependencies and

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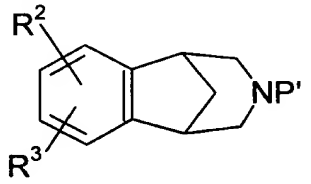
addictions (e.g., dependencies on, or addictions to nicotine (and/or tobacco products), alcohol, benzodiazepines, barbituates, opioids or cocaine), headache, stroke, traumatic brain injury (TBI),] psychosis, Huntington's Chorea, tardive dyskinesia, hyperkinesia, dyslexia, schizophrenia, multi-infarct dementia, age related cognitive decline, epilepsy, [including] petit mal absence epilepsy, senile dementia of the Alzheimer's type (AD), Parkinson's disease (PD), attention deficit hyperactivity disorder (ADHD) and Tourette's Syndrome in a mammal, comprising administering to a mammal in need of such treatment an amount of a compound according to claim 1 that is effective in treating such disorder or condition.

14. (Once Amended) A compound of the formula



(I′)

wherein R^2 and R^3 are defined as in claim 1; and P′ is $COOR^{16}$ wherein R^{16} is allyl, 2,2,2-trichloroethyl or $(C_1\text{-}C_6)$alkyl; $-C(=O)NR^5R^6$ wherein R^5 and R^6 are [defined as in claim 2] selected, independently, from hydrogen and $(C_1\text{-}C_6)$ alkyl, or R^5 and R^6 together with the nitrogen to which they are attached, form a pyrrolidine, piperidine, morpholine, azetidine, piperazine, -N-$(C_1\text{-}C_6)$alkylpiperazine or thiomorpholine ring, or a thiomorpholine ring wherein the ring sulfur is replaced with a sulfoxide or sulfone ; $-C(=O)H$, $-C(=O)(C_1\text{-}C_6)$alkyl wherein the alkyl moiety may optionally be substituted with from 1 to 3 halo atoms [, preferably with from 1 to 3 fluoro or chloro atoms]; benzyl, or t-butoxycarbonyl (t-Boc).

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